

Manufacturing Engineering, BS

TSMEGRBS

Program description

Successful manufacturing enterprises prosper in the global marketplace through a balance of design, sustainability, quality and production. Manufacturing engineering combines manufacturing processes (e.g., how materials are altered in either shape or properties) and the processes of manufacturing (e.g., design and management of manufacturing systems).

The BS program in manufacturing engineering prepares students to analyze, synthesize and control manufacturing operations using statistical methods; to collaborate across disciplines to design and build automated manufacturing systems for factory operation; to design innovative products and the equipment, tooling and environments necessary for their manufacture; to model, simulate and analyze manufacturing production processes for both small- and large-scale environments; and to provide technological leadership.

The curriculum is project-based, hands-on, teamwork-oriented and delivered in outstanding fabrication facilities. Graduates of this program become key team members who create and implement processes for making such varied products as airplanes, surgical instruments, toys and foodstuffs.

Accredited by the Engineering Accreditation Commission of ABET, <https://www.abet.org>, under the General Criteria and the Manufacturing Engineering Program Criteria.

This major is eligible for the Western Undergraduate Exchange program at the following location: Polytechnic campus. Students from Western states who select this major and campus may be eligible for reduced nonresident tuition at a rate of 150% of Arizona resident tuition plus all applicable fees. Students should click the link for more information and eligibility requirements of [the WUE program](#).

At a glance

- **College/School:** [Ira A. Fulton Schools of Engineering](#)
- **Location:** [Polytechnic](#) **WUE**

- **Second language requirement:** No
- **First required math course:** MAT 265 - Calculus for Engineers I
- **Math intensity:** Substantial 

Required courses (Major Map)

[2024 - 2025 Major Map](#)

[Major Map \(Archives\)](#)

Concurrent program options

Students pursuing concurrent degrees (also known as a "double major") earn two distinct degrees and receive two diplomas. Working with their academic advisors, students can create their own concurrent degree combination. Some combinations are not possible due to high levels of overlap in curriculum.

Accelerated program options

This program allows students to obtain both a bachelor's and master's degree in as little as five years. It is offered as an **accelerated bachelor's plus master's degree** with:

[Engineering, MS](#)

[Manufacturing Engineering, MS](#)

[Robotics and Autonomous Systems \(Systems Engineering\), MS](#)

Acceptance to the graduate program requires a separate application. Students typically receive approval to pursue the accelerated master's during the junior year of their bachelor's degree program. Interested students can learn about eligibility requirements and [how to apply](#).

Admission requirements

General university admission requirements:

All students are required to meet general university admission requirements.

[First-year](#) | [Transfer](#) | [International](#) | [Readmission](#)

Tuition information

When it comes to paying for higher education, everyone's situation is different. Students can learn about [ASU tuition and financial aid](#) options to find out which will work best for them.

Change of Major Requirements

A current ASU student has no additional requirements for changing majors.

Students should visit the [Change of Major form](#) for information about how to change a major to this program.

Transfer options

ASU is committed to helping students thrive by offering tools that allow personalization of the transfer path to ASU. Students may use [MyPath2ASU®](#) to outline a list of recommended courses to take prior to transfer.

ASU has [transfer partnerships](#) in Arizona and across the country to create a simplified transfer experience for students. These pathway programs include exclusive benefits, tools and resources, and they help students save time and money in their college journey.

Global opportunities

Global experience

Students learn to thrive in a global environment through the rich educational and interpersonal experiences inherent in study abroad. A resume enhanced by the valuable study abroad experience impresses prospective employers and also helps students stand out should they decide to pursue advanced study.

With over 300 [Global Education program opportunities](#) available to them, students are able to tailor their experience to their unique interests and skill sets. Whether in a foreign country, in the U.S. or online, students build communication skills, learn to adapt and persevere, and are exposed to research and internships across the world, increasing their professional network.

Career opportunities

Engineers collaborate on transdisciplinary teams to design, manufacture and deliver innovative technological products and services.

Graduates possess the technical skills in tandem with the professional skills of communication, teamwork and collaboration and the self-motivation and adaptability that many employers seek. Graduates are prepared to work in large corporations, government agencies and small businesses, and to pursue advanced degrees in graduate school. The program's emphasis on open-ended design and project-based learning supports the development of entrepreneurial skills and attitudes, and some students start companies of their own.

Graduates typically work as manufacturing engineers in a variety of companies, large and small. They are often members of design and development teams, cooperating with people within and outside their companies. Career employment opportunities include direct manufacturing support, manufacturing management, and quality control and assurance. Small and new startup companies value the strong, broad

and practical engineering skill set of program graduates. Program graduates are well placed and command top salaries.

Example job titles and salaries listed below are not necessarily entry level, and students should take into consideration how years of experience and geographical location may affect pay scales. Some jobs also may require advanced degrees, certifications or state-specific licensure.

Career	*Growth	*Median salary
<u>Engineering Manager</u>	4.1%	\$159,920
<u>Human Factors Engineer</u> ☀	11.7%	\$96,350
<u>Hydroelectric Production Manager</u>	1.6%	\$107,560
<u>Industrial Engineer</u> ☀	11.7%	\$96,350
<u>Manufacturing Plant Manager</u>	1.6%	\$107,560
<u>Power Plant Manager</u>	1.6%	\$107,560
<u>Power Production Manager</u>	1.6%	\$107,560
<u>Quality Control Manager</u>	1.6%	\$107,560
<u>Supply Chain Engineer</u> ☀	11.7%	\$96,350
<u>Validation Engineer</u> ☀	11.7%	\$96,350

* Data obtained from the Occupational Information Network (O*NET) under sponsorship of the U.S. Department of Labor/Employment and Training Administration (USDOL/ETA).

☀ [Bright Outlook](#)

Professional licensure

ASU programs that may lead to professional licensure or certification are intended to prepare students for potential licensure or certification in Arizona. Completion of an ASU program may not meet educational requirements for licensure or certification in another state. For more information, students should visit the [ASU professional licensure](#) webpage.

Students should note that not all programs within the Ira A. Fulton Schools of Engineering lead to professional licensure.

Contact information

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